

**ABSTRACT:****CHANNEL ESTIMATION APPARATUS AND METHODS**

This invention is generally concerned with the reception of high rate digital data, and more particularly with methods and apparatus for improved channel estimation in high rate digital data communications systems, particularly packet data communications systems.

A channel estimator for a packet data communications receiver is described. The channel estimator comprises an input to receive data for symbols of a data packet transmitted over a channel to said receiver; a memory (406) to store the received symbol data; a training sequence determiner (408, 410) to determine a training sequence using one or more variable data portions or fields of the data packet; and an adaptive filter (200) coupled to the memory and to the training sequence determiner and configured to use the received symbol data and the training sequence to determine an estimate of a response of the channel.

Figure 4.